National Aeronautics and Space Administration

NASA

DEVELOP National Program
DISASTERS

Russia Disasters and Human Health

Utilization of Remote Sensing Technology and Land Imagery in Conjunction with Atmospheric Modeling To Determine Effects and Dynamics of the 2010 Russian Forest Fires

The purpose of this study is to analyze the dynamics and impacts of the 2010 Russian forest fires. The analysis of these fires will allow a methodology to be formulated giving end users an established process to better analyze the impacts and dynamics of forest fires occurring under similar conditions. Risk mapping formulated from the study of these specific fires will also provide better forecasting for both this area and others of comparable geographic characteristics.
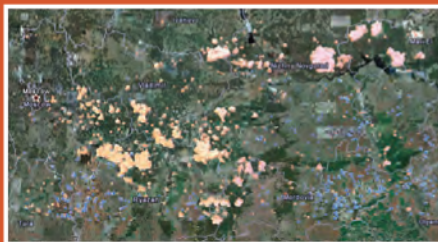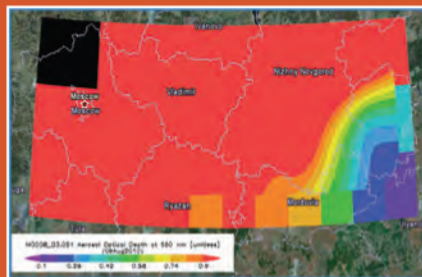
Gulf of Mexico Disasters

Analyzing Tropical Cyclone Induced Precipitation and Flooding using TRMM, the CHILI Mesonet, and NEXRAD Data

This project investigates the limitations and applications of available precipitation datasets to assist in monitoring tropical cyclone-induced freshwater flooding. Accurate and spatially continuous rainfall estimates of tropical weather systems are only measured when a system is in range for radar, thus the team utilized data from the Tropical Rainfall Measuring Mission (TRMM) and the University of South Alabama Mesonet Network to compare with data from the NEXRAD radar for three historic tropical landfalls. The feasibility of incorporating TRMM data into the mesonet network was examined, along with the generation of overland flow model outputs. The results benefited the Center for Hurricane Intensity and Landfall Investigation by providing a detailed comparison of available precipitation datasets and by demonstrating potential applications of TRMM precipitation data.

Pacific Ocean Disasters

Tracking Pumice Rafts in the Pacific Ocean: Remote Sensing Monitoring of Pumice Rafts Derived from Shallow Marine Volcanism in the Pacific Ocean

Pumice is formed by explosive volcanic eruptions and collects on the surface of a body of water to form a raft. These rafts can damage boats, block shipping lanes and harbors, and impede local fisheries. This project focuses on finding pumice rafts in oceans, lakes, and rivers, with an emphasis on the Pacific Ocean. The team compiled information about past occurrences of pumice rafts in order to assist in the identification of future pumice rafts. We created a database listing the dates and locations of pumice rafts and the satellites and spectral bands that can be used to identify them. This information can be used to quickly locate and track pumice rafts.
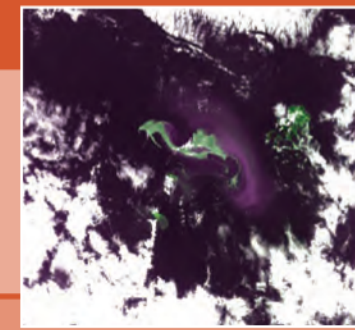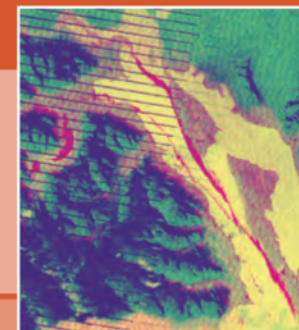
DISASTERS

Japan Disasters

Highlighting NASA Earth Observation Capabilities Relating to Natural Disasters Decision Support

On March 11, 2011, the Great Tohoku Earthquake occurred approximately 70 kilometers off the coast of Japan. This magnitude 9.0 earthquake was closely followed by a massive tsunami that reached 7 meters in height. This project highlights the capabilities of NASA Earth Observation Systems (EOS) relating to disaster management and highlights the benefits of using NASA EOS to provide support for disasters around the world. An analysis of the economic impact of this disaster was also made to help policy makers in the United States and Japan.

Before (2010-12-06)   After (2011-06-08)

2010-12-06   2011-06-08